

## **Glucose Alerting System**

Client: Olive Cernigila,

Advisor: Dr. John Puccinelli

### **Team:**

Isabel Ploessl - Co-Team Leader

Claudia Beckwith - Co-Team Leader

Lauren Klein - BSAC

Ella Prose - BPAG

Audrey Zeller - BWIG

Kiera Klemm - Communicator

Date: 10/02/2025

## **Problem Statement:**

The overall goal of the Continuous Glucose Monitoring Bracelet is to make blood glucose status more clearly visible, understandable, and actionable for anyone supervising a young child with Type 1 Diabetes. Studies show that a diagnosis of diabetes can become just as stressful for parents to monitor and understand, as it is for the kids. This prototype should help relieve some of this stress by eliciting a visible and actionable signal to parents, which will convey whether treatment is needed or not.

**Brief Status Update:** We have completed our design matrices and are finishing up the Preliminary Presentation!

## **Summary of Weekly Team Member Design Accomplishments:**

- Team:
  - Edited PDS
  - Finished Matrices
  - Created Slides for Presentation
  - Began drafting Report

| Name             | Activity                                                                                                                                                                                                                                                                                     | Time (hr)                                                | Week Total (hr) |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------|
| Isabel Ploessl   | <ul style="list-style-type: none"> <li>- Attended client meeting</li> <li>- Completed Slides</li> <li>- Edited PDS</li> <li>- Created Progress Report</li> <li>- Re-drew battery designs</li> <li>- Sketched Idea and dimensions for Final Design</li> <li>- Created Final Design</li> </ul> | .5 hr<br>.5 hr<br>.5 hr<br>.5 hr<br>1 hr<br>1 hr<br>2 hr | 6 hrs           |
| Claudia Beckwith | <ul style="list-style-type: none"> <li>- Attend client meeting</li> <li>- Researched alternate connectivity options</li> <li>- Worked on preliminary presentations</li> <li>- Updated PDS</li> </ul>                                                                                         | .5 hrs<br>1 hr<br>1hr<br>.5 hrs                          | 3 hr            |
| Lauren Klein     | <ul style="list-style-type: none"> <li>- Attended Client Meeting</li> <li>- BSAC with Faculty Meeting</li> <li>- Preliminary Slides</li> <li>- Researched for PDS Updates</li> </ul>                                                                                                         | .5 hr<br>1 hr<br>1 hr<br>1 hr                            | 3.5 hrs         |
| Ella Prose       | <ul style="list-style-type: none"> <li>- Attended BPAG meeting</li> <li>- Attended Client Meeting</li> <li>- Completed preliminary slide</li> <li>- Researched T1D statistics</li> <li>- Edited and completed Design Matrix</li> </ul>                                                       | .5 hr<br>.5 hr<br>1 hr<br>1 hr<br>1 hr                   | 4 hrs           |

|               |                                                                                                                                                                                                                                                                            |                                 |         |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------|
| Audrey Zeller | <ul style="list-style-type: none"> <li>- Finished slide for preliminary presentation</li> <li>- Updated website with PDS and progress reports</li> <li>- Made/drew designs and wrote paragraphs for the PDS</li> <li>- Took feedback and fixed my design matrix</li> </ul> | .5 hr<br>1 hr<br>1 hr<br>1 hr   | 3.5 hrs |
| Kiera Klemm   | <ul style="list-style-type: none"> <li>- Edited design matrix and PDS with given feedback</li> <li>- Prepared for preliminary presentation</li> <li>- Reviewed client meeting notes</li> <li>- Continued battery research</li> </ul>                                       | 1hr<br>1.5 hr<br>.5 hr<br>.5 hr | 3.5 hr  |

### Weekly/Ongoing Difficulties:

- Connectivity

### Upcoming Team and Individual Goals:

- Team:
  - Finish Presentation
  - Begin Report
  - Order Materials!!!
  - Create circuit on a large scale
- Isabel Ploessl:
  - Create the format of the preliminary report
  - Work on preliminary report
  - Start working on large-scale circuit
- Claudia Beckwith:
  - Start building Nightscout API
  - Work on preliminary report
  - Develop circuit for proof of concept with colored LEDs

- Lauren Klein:
  - Work on preliminary report
  - Start prototyping/fabrication
  - Attend BSAC Executive
- Ella Prose:
  - Practice preliminary design presentation
  - Find materials and order them
  - Work on preliminary report
- Audrey Zeller:
  - Practice for preliminary design presentation
  - Update website
  - Do more research and refine ideas for designs
- Kiera Klemm:
  - Give preliminary design presentation
  - Make final battery decision
  - Work on preliminary report

### **Project Timeline :**

| <b>Project Goal</b>       | <b>Deadline</b> | <b>Team Assigned</b> | <b>Progress</b> | <b>Completed</b> |
|---------------------------|-----------------|----------------------|-----------------|------------------|
| Client Meeting            | 9/8             | ALL                  | 100%            | Yes              |
| Weekly Progress Report    | 9/11            | ALL                  | 100%            | Yes              |
| PDS                       | 9/18            | ALL                  | 100%            | Yes              |
| Design Matrix             | 9/27            | ALL                  | 100%            | Yes              |
| Preliminary Presentations | 10/3            | ALL                  | 95%             | Almost!          |
| Preliminary Deliverables  | 10/8            | ALL                  | 15%             | No               |
| Show and Tell             | 10/31           | ALL                  |                 |                  |
| Poster Presentations      | 12/5            | ALL                  |                 |                  |
| Final Deliverables        | 12/10           | ALL                  |                 |                  |

### Expenses :

| Item                          | Description | Manufacturer | Part Number | Date | QTY | Cost Each | Total | Link   |
|-------------------------------|-------------|--------------|-------------|------|-----|-----------|-------|--------|
| No purchases scheduled so far |             |              |             |      |     |           |       |        |
| TOTAL:                        |             |              |             |      |     |           |       | \$0.00 |